

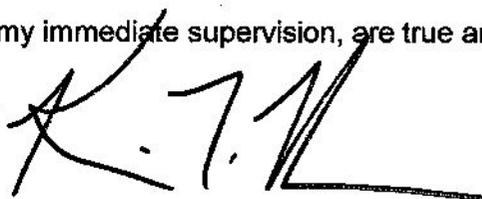
ENGINEERING STATEMENT

The engineering data contained herein have been prepared on behalf of TRINITY BROADCASTING NETWORK, licensee of television translator K56GF, Channel 56 in Sioux Falls, South Dakota, in support of this Application for Construction Permit to specify operation on Channel 40 from the licensed K56GF site. This proposal is being submitted in response to the Commission's reclamation of Channel 56 spectrum for future auction, thereby placing this translator in a displacement situation.

It is proposed to mount a standard Andrew omnidirectional antenna at the authorized height on the side of an existing 60-meter communications tower. Exhibit B is a map upon which the predicted service contours are plotted. It is important to note that the newly proposed 74 dBu contour encompasses a significant portion of that which obtains from the licensed K56GF facility. Operating parameters for the proposed facility are tabulated in Exhibit C. A contour overlap analysis and interference study are provided in Exhibit D, and a power density calculation follows as Exhibit E.

Because no change in the overall height or location of the existing tower is proposed, the FAA has not been notified of this application. The FCC issued Antenna Structure Registration Number 1050703 to this tower.

I declare under penalty of perjury that the foregoing statements and the attached exhibits, which were prepared by me or under my immediate supervision, are true and correct to the best of my knowledge and belief.

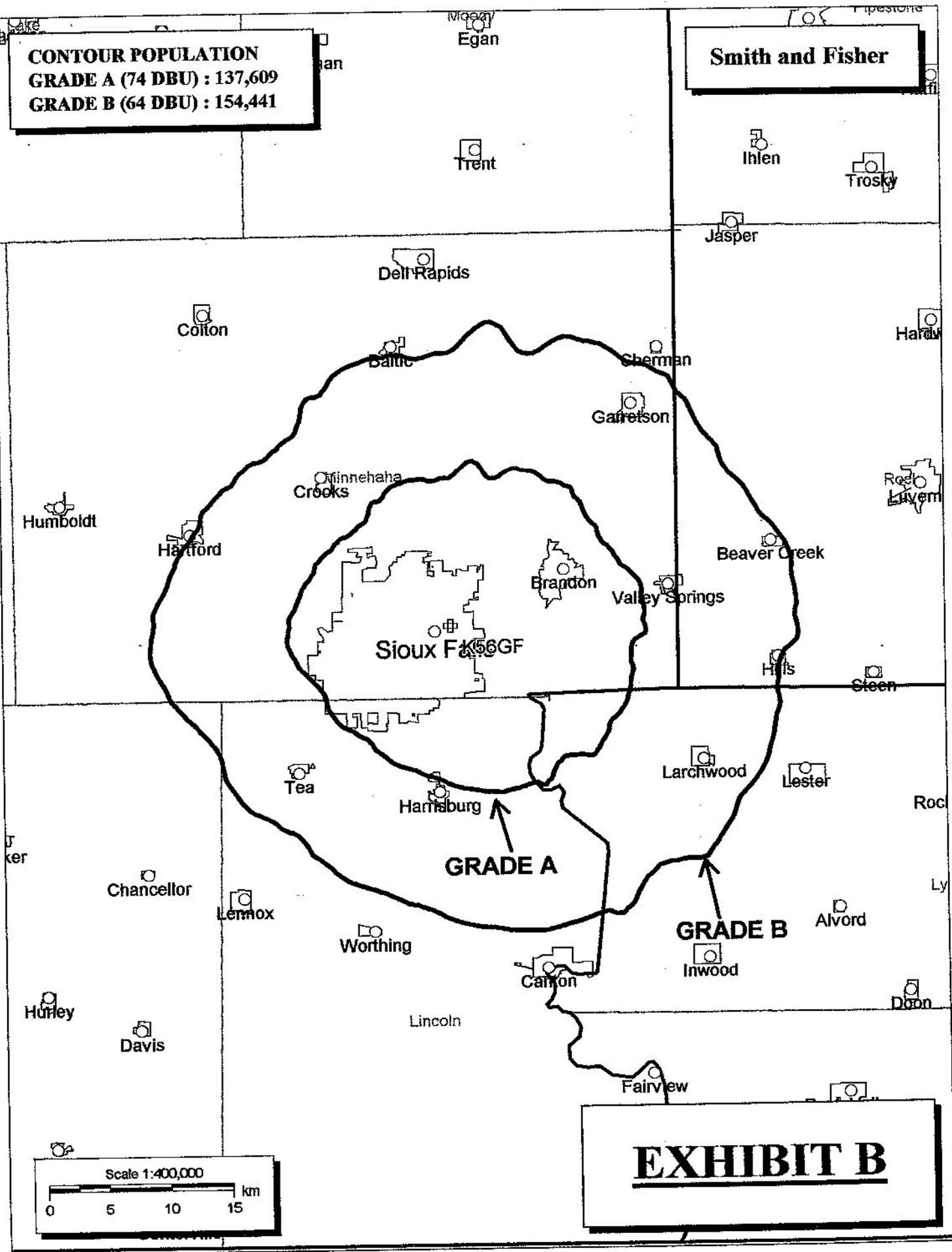


KEVIN T. FISHER

October 28, 2005

**CONTOUR POPULATION**  
**GRADE A (74 DBU) : 137,609**  
**GRADE B (64 DBU) : 154,441**

**Smith and Fisher**



Scale 1:400,000



**EXHIBIT B**

## PROPOSED OPERATING PARAMETERS

PROPOSED K56GF  
CHANNEL 40 – SIOUX FALLS, SOUTH DAKOTA

Transmitter Power Output:	1.0 kw
Transmission Line Efficiency:	74.0%
Antenna Power Gain – Toward Horizon:	19.2
Antenna Power Gain – Main Lobe:	28.2
Effective Radiated Power – Toward Horizon:	14.2 kw
Effective Radiated Power – Main Lobe:	20.9 kw
Transmitter Make and Model:	Type-accepted
Rated Output	1.0 kw
Transmission Line Make and Model:	Andrew LDF7-50A
Size and Type:	1-5/8" foam dielectric
Length:	210 feet
Antenna Make and Model:	Andrew ALP16L4-HSOC
Orientation	Omnidirectional
Beam Tilt	1.0 degrees
Effective Height Above Ground:	57 meters
Effective Height Above Mean Sea Level:	499 meters

CONTOUR OVERLAP AND  
LONGLEY-RICE INTERFERENCE STUDIES  
PROPOSED K56GF  
CHANNEL 40 – SIOUX FALLS, SOUTH DAKOTA

We conducted a computer analysis of the interference situation for the proposed facility, the results of which are shown in Exhibit D-2. The study is based on contour protection requirements of Sections 74.705, 74.706, and 74.707 of the FCC's Rules with respect to analog full-power, digital full-power, and low power television stations, respectively. It concludes that the facility proposed herein meets these requirements except to three stations: KMEG-DT, Channel 39 in Sioux City, Iowa; KTIV-DT, Channel 41 in Sioux City, Iowa; and, KUON-DT, Channel 40 in Lincoln, Nebraska.

We then conducted detailed interference studies using the Longley-Rice methodology contained in the Commission's *OET Bulletin No. 69*, with respect to these facilities of concern. The software utilizes a 2-square kilometer cell size (except where noted), calculates signal strength at 1.0 kilometer increments along each radial studied, and employs the 1990 U.S. Census to count population within cells. In addition, the program does not attribute interference to the proposed facility in cells within the protected contour of the station under study where interference from another source (other than Trinity's proposed K56GF) already is predicted to exist (also known as "masking"). The results of these studies are provided in Exhibit D-3. They conclude that

the facility proposed herein causes no significant new interference to any of the potentially affected stations.

As a result, waiver of Section 74.706 of the Commission's Rules with respect to interference to KMEG-DT, KTIV-DT and KUON-DT is requested and believed to be justified based on the aforementioned Longley-Rice studies.

SMITH AND FISHER

EXHIBIT D-2

PROPOSED K56GF  
CH. 40 - SIOUX FALLS SD

REFERENCE  
43 33 14 N  
96 41 05 W

LPTV Pwr = 20 kW, HAMS COR= 498 M

DISPLAY DATES  
DATA 10-22-05  
SEARCH 10-26-05

..... Channel 40Z, 626 MHz .....

Call	Channel	Location	Dist	Azi	FCC	Margin
KMEG-D*CP	39	Sioux City	IA 113.87	160.6	> 128.62	-14.75
KTIV-D*CP	41	Sioux City	IA 113.88	160.6	> 127.13	-13.25
KUON-D*LI	40	Lincoln	NE 268.98	175.9	> 278.16	-9.18
K40CO* LI	40N	Storm Lake	IA 169.23	125.1	> 166.20	3.03
K40FZ* LI	40+	Brookings	SD 87.54	355.6	> 074.70	12.89
KPXM-D*LI	40	St. Cloud	MN 312.12	48.2	> 309.32	13.96
K40BU LI	40N	St. James	MN 178.73	69.1	> 164.52	14.21
K25AA LI	25N	Rock Rapids, Etc	IA 44.17	116.4	> 022.17	22.00
KTIV-D ST	41	Sioux City	IA 113.88	160.6	> 068.52	45.36
KMEG-D ST	39	Sioux City	IA 113.87	160.6	> 057.55	56.32
K40HA CP	40-	Watertown	SD 150.25	347.1	> 077.99	72.26

\* Actual radials antenna height and directional patterns used (if any)

## INTERFERENCE SUMMARY

PROPOSED K56GF  
CHANNEL 40 – SIOUX FALLS, SOUTH DAKOTA

<u>Call Sign</u>	<u>Status</u>	<u>City, State</u>	<u>Ch.</u>	<u>Longley-Rice Service Population</u>	<u>Unmasked Interference From Proposed Facility</u>	<u>%</u>
KMEG-DT BPCDT-19990415KE	CP	Sioux City, IA	39	617,084	1,625	0.3
KTIV-DT BPCDT-19991101AIH	CP	Sioux City, IA	41	603,801	2,377	0.4
KUON-DT BLEDT-20030409ABB	Lic.	Lincoln, NE	40	983,252	0	0

POWER DENSITY CALCULATION

PROPOSED K56GF  
CHANNEL 40 – SIOUX FALLS, SOUTH DAKOTA

Since the FCC considers the possible biological effects of RF transmissions in its environmental determinations, we have studied the matter with respect to this Sioux Falls facility. Employing the methods set forth in *OET Bulletin No. 65* and considering a main-lobe effective radiated power of 20.9 kw, an effective antenna height of 57 meters above ground, and the vertical pattern of the Andrew antenna, maximum power density two meters above ground of  $0.0060 \text{ mw/cm}^2$  is calculated to occur 18 meters from the base of the tower. Since this is only 1.4 percent of the  $0.42 \text{ mw/cm}^2$  reference for uncontrolled environments (areas with public access) surrounding a facility operating on Channel 40 (626-632 MHz), this proposal may be excluded from consideration with respect to public exposure to nonionizing electromagnetic radiation.

Further, the station owner will take whatever precautionary steps are necessary, such as reducing power or leaving the air temporarily, to ensure that workers operating in the vicinity of the antenna are not exposed to excessive nonionizing radiation.